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EXAMINER	
MALKOWSKI, KENNETH J	
ART UNIT	**PAPER NUMBER**
2613	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/773,238	NOGUCHI ET AL.	
	Examiner	Art Unit	
	Kenneth J. Malkowski	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *16-19* is/are allowed.

6)☒ Claim(s) *1-6,8-15 and 20* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 16-19 are allowed. The following is a statement of reasons for the indication of allowable subject matter: With respect to independent claim 16, the prior art does not fairly teach a wavelength selection module with a first reference light and a second reference light source means for outputting a constant output wavelength wherein said reference lights are multiplexed with a lights of a plurality of different wavelengths, a wavelength selection section for inputting said multiplexed referenced lights and plural wavelength light and outputting lights according to an external control signal, a branching means for splitting the output of said wavelength selecting means to first through third lights, a second filter means for inputting the third light and also selectively outputting the light of the output light wavelength of said second reference light source and in combination with all other limitations disclosed in independent claim 16.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> ~~(e)~~ the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 8-15 are rejected under 35 U.S.C. 102(e) as being anticipated by International published application number WO 97/1065B to O'Donnell et al.

With respect to claim 8, O'Donnell et al. discloses a wavelength selection module (figure 3) comprising: wavelength selecting means for inputting lights of a plurality of different wavelengths (21, Figure 3 adaptive wavelength filter)(column 3 lines 37-44 (the WDM signal 14 comprises multiple channels or modulated carrier signals)); branching means for branching output of said wavelength selecting section to a first light and a second light (light is branched at element 156 into a first light going to element 158 and a second element 160, Figure 9); first filter means for inputting said second light and selectively transmitting light of the particular wavelength (154, Figure 3)(column 5 lines 23-30 (WDM filter 154 functions to separate the reference signal from the filtered optical signal and is reflective in a band around 1300nm but transmissive in a band around 1500nm)); and control means (128, Figure 1 (controller)) for adjusting a relationship between a control signal applied to said wavelength selecting means (150, Figure 1 (tunable filter)) and the selected wavelength on the basis of said control signal, output of said first filter and transmitting wavelength of said filter (column 3 lines 50-55 (the transmission peak 116 is variable based upon a control signal 120, which is generated by the driver electronics)).

With respect to claims 9-10,O'Donnell et al. discloses the wavelength selection module according to claim 8 (Figure 1), wherein said control means includes means for controlling an output of the light transmitted selectively with one of said first and second filters (first filter 150, tunable filter selectively transmits a band range according to control signal from driver electronics 118. It will be assumed that applicant is referring to the wavelength means mentioned in claim 8 as one of first and second filters as no

other second filter is mentioned in claim 8) to said first light by controlling output of said control signal corresponding to the light selectively transmitted by said first or second filter (output 16 of first filter 150 is used to determine control signal from controller 128, Figure 1) (column 3 lines 50-55 (the transmission peak 116 is variable based upon a control signal 120, which is generated by the driver electronics)).

With respect to claims 11, O'Donnell et al. discloses the wavelength selection module according to claim 8, wherein said control means includes a third filter (156, Figure 3 (C/L band filter)) for inputting the first light and attenuating the wavelengths of lights selectively transmitted by said first or second filter (WDM filter 156 is reflective to the C-band and transmissive to the L-band, in other embodiments three or four bands can be filtered with additional WDM filters)).

With respect to claim 12,O'Donnell et al. discloses a wavelength selection module comprising: reference light source means for providing a constant output wavelength (110, Figure 1 (wavelength reference source)); multiplexing means for multiplexing input light including lights of a plurality of different wavelengths and output light of said reference light source (a wdm signal with a plurality of different wavelengths 14 is multiplexed with a reference wavelength 111, Figure 1)(column 2 lines 14-22); wavelength selecting means for inputting output light of said multiplexing means and selecting and outputting lights of a plurality of wavelengths (150, Figure 1) in accordance with an external control signal (120, Figure 1)(controller 128 creates a control signal which is sent to driver electronics 118 in order to control wavelength selecting filter 150)(column 3 lines 50-55 (the transmission peak 116 is variable based

upon a control signal 120, which is generated by the driver electronics)); branching means for branching output of said wavelength selecting means into a first light and a second light (output light from selective filter 150 is branched into a reference light and a wdm light, Figure 1); a first filter for inputting said second light and selectively transmitting light of the wavelength of output light from said reference light source (154, Figure 3)(column 5 lines 23-30 (WDM filter 154 functions to separate the reference signal from the filtered optical signal and is reflective in a band around 1300nm but transmissive in a band around 1500nm)); and control means (controller, 128 Figure 1) for adjusting a relationship between the control signal applied to said wavelength selecting means and the selected wavelength in accordance with said control signal (column 3 lines 44-55), output of said first filter and wavelength of said reference light source (post-processing electronics 126 accepts the reference light and the wdm light in order to create control signal from controller 128 which is applied to wavelength selecting means 150, Figure 1)

With respect to claims 13-14, O'Donnell et al. discloses the wavelength selection module according to claim 12, wherein said control means (128, Figure 1) includes means for controlling said control signal to continuously select the light selectively transmitted through one of said first and second filter with said wavelength selecting means (filter (output 16 of first filter 150 is used to determine control signal from controller 128, Figure 1) (column 3 lines 50-55 (the transmission peak 116 is variable based upon a control signal 120, which is generated by the driver electronics)).

With respect to claims 15, O'Donnell et al. discloses the wavelength selection module according to claim 12, wherein said control means includes a third filter (156, Figure 3 (C/L band filter)) for inputting the first light and attenuating the wavelengths of lights selectively transmitted by said first or second filters ((WDM filter 156 accepts signals not filtered by first tunable filter 150 or second filter 154 and is reflective to the C-band and transmissive to the L-band, in other embodiments three or four bands can be filtered with additional WDM filters)).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over International published application number WO 97/1065B to O'Donnell et al. in view of U.S. Patent No. 6,407,376 to Korn

With respect to claims 1 and 20, O'Donnell discloses a wavelength selection module (title: method for independently controlling the wavelength component powers in an optical WDM system) comprising: wavelength selecting means for inputting a light (21, Figures 3 and 5 (adaptive wavelength filter))(page 3 lines 6-10 (an adaptive wavelength filter as described allows for the selective addition of subtraction of a WDM channel from an optical communication network)), and selecting and outputting lights of

the plurality of wavelengths in accordance with a control signal applied from an external circuit (page 8 lines 28-33 (oscillators are combined and supplied to the control port of the filter))(24, Figures 2 and 5); and demultiplexing means for demultiplexing and outputting each wavelength of the output lights of said wavelength selecting means (25, Figure 2 depicts the multiplexed output signal demultiplexed into four separate wavelengths). However, O'Donnell fails to disclose multiplexing lights of a plurality of different wavelengths within the wavelength selection module. Despite this multiplexing wavelengths in an adaptive filter setting, typically to introduce a reference wavelength, is well known in the art and is not considered a patentably distinct limitation. Korn, from the same field of endeavor discloses a tunable optical filter which multiplexes a wdm signal with a plurality of different wavelengths (14, Figure 1) with a reference wavelength (111, Figure 1)(column 2 lines 14-22). Therefore, it would have been obvious to one of ordinary skill in the art to implement the multiplexing of a wdm signal and a reference signal as taught by Korn in the adaptive wavelength filter as disclosed by O'Donnell. The motivation for doing so would have been to provide for out-of-band calibration and thereby attaining the resulting benefits such as simultaneous monitoring and calibrating, higher accuracy, reduced complexity (Korn: column 2 lines 6-22) as well as increased power efficiency that results from not having to tap off a certain percentage of the optical signal for monitoring purposes.

With respect to claim 2, O'Donnell in view of Korn disclose the wavelength selection module according to claim 1 (O'Donnell: Figure 2), further comprising means for inputting output lights of said demultiplexing means (O'Donnell: Figure 2 depicts

wavelengths 1-4 into control circuit 26) and outputting lights of unwanted wavelengths through an attenuation process (Korn: Figure 4 depicts the attenuation of wavelengths not within specific wave bands)(Korn: column 3 lines 45-50 (tunable filter filters the wdm signal))(O'Donnell: page 3 lines 6-10 (an adaptive wavelength filter as described allows for the selective addition of subtraction of a WDM channel from an optical communication network)).

With respect to claim 3, O'Donnell in view of Korn disclose the wavelength selection module according to claim 1, wherein the wavelength selection means is an acousto-optical tunable filter (AOTF)(O'Donnell: (page 3 lines 35-36 (acousto-optic filter)).

With respect to claim 4, O'Donnell in view of Korn disclose the wavelength selection module according to claim 3, wherein the AOTF includes means for selecting a light of the wavelength corresponding to the frequency of an RF signal applied to an inter digit transducer (AOTF's using low frequency control signals such as RF signals necessarily include IDT's in order to function)) through an RF signal input port (O'Donnell: pages 2-3 lines 35-36 and 1-18 (injecting a lower frequency EM waveform into the filter allows for adding or subtracting wdm channels, low frequency control signal is applied to the filter))(O'Donnell: page 8 lines 29-33 (low frequency oscillators control the filtering))(O'Donnell: 24, Figure 2).

With respect to claim 5, O'Donnell in view of Korn disclose a wavelength selection module comprising: wavelength selecting means for selecting and outputting a

plurality of wavelengths (O'Donnell: 22, Figure 3 comprising wavelengths 1-4) from an input light (O'Donnell: 14, Figure 3) in accordance with an external control signal (O'Donnell: 24, Figure 3); an optical filter including demultiplexing means for demultiplexing output light of said wavelength selecting means into lights of a plurality of wavelengths (O'Donnell: 29, Figure 3 shows the demultiplexing of signal light 22 into four distinct wavelengths); reference light source means for generating a reference light for said filter (Korn: 110, Figure 1); and multiplexing means for multiplexing input light and said reference light and inputting the multiplexed light to said wavelength selecting means (Korn: lights 14 and 111 are multiplexed prior to being input into filter 150).

With respect to claim 6, O'Donnell in view of Korn discloses the wavelength selection module according to claim 5, wherein said demultiplexing means includes monitor output (Korn: signals from signal detector 124 and reference wave detector 122 are used to monitor) and control signal for controlling said wavelength selecting section (O'Donnell: 21, Figure 3)(Korn: 150, Figure 1) when the light of the wavelength of said reference light source is outputted to said monitor output (Korn: reference wavelength contained in signal 16 at output of filter 150 results in a monitor output at the output of wave reference detector 122, Figure 1) and a control signal for controlling said wavelength selecting section based on the wavelength of said reference light source are controlled (Korn: controller 128 creates a control signal which is sent to driver electronics 118 in order to control wavelength selecting filter 150).

Allowable Subject Matter

6. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to show the state of the art with respect to optical distortion compensation in optical transmission systems:
U.S. Patent No. 6,341,021 is cited to show a wdm tunable filter system with rf feedback filter control using multiplexing and demultiplexing

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J. Malkowski whose telephone number is (571) 272-5505. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KJM 2/16/07

DALZID SINGH
PRIMARY EXAMINER

Dalzid Singh